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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,046	02/02/2005	Gert Wim T Hooft	NL 020726	7578
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EXAMINER				
LEE, HWA S				
ART UNIT		PAPER NUMBER		
2886				
MAIL DATE		DELIVERY MODE		
03/18/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/523,046

Applicant(s)

T HOOFT ET AL

Examiner

Hwa S. Lee (Andrew)

Art Unit

2886

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al. (US 6,160,826) in view of Bouma et al (Journal of Biomedical Optics cited in IDS of 2/2/05) and Sharp et al. (Optical Society of America, cited in IDS of 9/12/05).

Swanson et al. (Swanson hereinafter) show an apparatus for performing optical frequency domain reflectometry comprising:

- an optical source to emit an optical beam (14)
- a sample space (38)
- a photodetector (50 and detector shown in 96)

an interferometer set-up (18) including
a reference reflector (34) and
a beam splitter-combination (30) arrangement to
split the optical beam into a reference beam to the reference reflector and a
sample beam to the sample space and to
combine a reflected beam from the reference reflector with a returning beam from the
sample space to form a combined beam, and provide the combined beam to a first port (50) of
the photodetector, and
a further beam splitter ("90/10") configured to receive part of a radiation from the beam
splitter-combination arrangement and to couple out an output beam to a second port (the detector
shown in 96) of the photodetector.

Swanson teaches that the light source should be appropriately coated on the facets to
suppress lasing and teaches that the gain medium fiber may be doped with thulium. Swanson
however does not expressly teach the wavelength to be used when the medium is doped with
Tm.

Bouma et al (Bouma hereinafter) show optical coherence tomography imaging at 1.81
 μm using a Tm-doped fiber source. At the time of the invention, one of ordinary skill in the art
would have used the imaging system at 1.81 μm in order to improve imaging depth penetration.

Swanson also does not show the details for the coatings of the Tm-doped fiber source
producing 1.81 μm light.

Sharp et al. (Sharp hereinafter) show a mode-locked fiber laser doped with thulium characterized by low threshold pumping (energy level) achieved by use of coatings shown in Figure 1. At the time of the invention, one of ordinary skill in the art would have combined Swanson with Sharp in order to prevent unwanted lasing and improve the 1.81 μm production by use of the cavity tuned to 1.81 μm .

With respect to the use of the terms “first port” and “second port” of the detector, Swanson shows two separate detectors acting as a first port and a second port, and it is a matter of mere nomenclature for a first detector to be called a first port and for the second detector to be called a second port. It is also a matter of mere nomenclature to call the group of the two detectors (detector 50 and the detector of 96) as a photodetector. Yet it would also be a matter of nomenclature to call elements 96, 22, and 50 to be a “photodetector” such that the beam from beamsplitter 90/10 is entering a second port of the photodetector and the beam from beamsplitter 30 to be entering the first port of the “photodetector.” In addition, even if it was not a matter of nomenclature, it would have been obvious to attach both detector 50 and the detector of 96 and thus creating a “first port” and a “second port” as it has been held that it only involves routine skill in the art to combine two separate working parts to form an integral combined part. If the Applicant argues that the present invention has a photodetector that is different from the detector discussed by the Examiner above, then the claims and disclosure will be rejected as non-enabling and failing to show critical features of the invention.

With respect to claim 6, the prior art of record does not expressly state the quality of the reflectivity; however a skilled artisan would have been motivated to use the highest reflectivity available including less than 0.04.

Response to Arguments

4. Applicant's arguments filed 4/3/07 have been fully considered but they are not persuasive.
5. Applicant argues Swanson does not show that the other coupler (90/10) is not connected to any further input port of the very same photodetector (50). The grounds of rejection is that the detector 50 and the detector shown in 96 are part of a photodetector arrangement wherein the light received by detector 50 is the first port and the light received by the detector in 96 is a second port. As stated in the previous office action and above with respect to the discussion of "first port" and "second port", Swanson shows two separate detectors acting as a first port and a second port, and it is a matter of mere nomenclature for a first detector to be called a first port and for the second detector to be called a second port. It is also a matter of mere nomenclature to call the group of the two detectors (detector 50 and the detector of 96) as a photodetector. Yet it would also be a matter of nomenclature to call elements 96, 22, and 50 to be a "photodetector" such that the beam from beamsplitter 90/10 is entering a second port of the photodetector and the beam from beamsplitter 30 to be entering the first port of the "photodetector." In addition, even if it was not a matter of nomenclature, it would have been obvious to attach both detector 50 and the detector of 96 and thus creating a "first port" and a "second port" as it has been held that it

only involves routine skill in the art to combine two separate working parts to form an integral combined part.

6. In the previous Office Action, the Examiner submitted that the arrangement discussed above is similar to the arrangement disclosed by the Applicant. Since the Applicant does not argue that the present invention has a photodetector that is different from the detector discussed by the Examiner above, Applicant's arguments are not persuasive.

7. Furthermore, even if Applicant's arguments were found to be persuasive, the present claims would not be allowable over the prior art in that the limitation of "configured to..." is not a positive limitation and does not have any patentable weight. The only limitation having patentable weight is "a further beam splitter." The limitation following "configured to..." does not have patentable weight since "configured to" does not further structurally define the beam splitter, but rather narratively state what the beam splitter is supposed to do. The use of "configured to" only requires the beamsplitter of the prior to be capable of performing the function of "configured to".

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Hwa S. Lee whose telephone number is 571-272-2419. The examiner can normally be reached on Tue-Fr.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur R. Chowdhury can be reached on 571-272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hwa S. Lee (Andrew)/

Primary Examiner, Art Unit 2886